

**REMARKS*****Summary of the Response***

Upon consideration of the instant response, claims 1 – 28 will remain pending.

***Summary of the Official Action***

In the instant Office Action, the Examiner has rejected 1 – 28 over the art of record, and claims 20 – 23 based upon formal matters. By the present remarks, Applicants submit that the rejections have been overcome, and respectfully request reconsideration of the outstanding Office Action and allowance of the present application.

***Traversal of Rejection Under 35 U.S.C. § 103(a)******1. Over Perez in view of Chester***

Applicant traverses the rejection of claims 1 – 17, 27, and 28 under 35 U.S.C. § 103(a) as being unpatentable over PEREZ et al. (U.S. Patent No. 6,487,959) [hereinafter “PEREZ”] in view of CHESTER (U.S. Patent No. 3,0947,257). The Examiner asserts that PEREZ shows all the recited features except that tubes are arranged along skin segments and not between stiffening elements, that CHESTER shows a tube positioned between stiffening members in a wing joint, and that it would have been obvious to modify PEREZ to position the tubes to the stiffening elements, as taught by CHESTER. Applicant traverses the Examiner’s assertions.

Applicant’s independent claim 1 recites, *inter alia*, whirl chambers comprising lateral stiffening elements and longitudinal stiffening elements, with

joints structured and arranged to jointly couple said lateral stiffening elements and said longitudinal stiffening elements of said whirl chambers, *a first drive tube section and a second drive tube section being arranged between adjacent longitudinal stiffening elements*, and a control device functionally connected to said pump to *swivel adjacent whirl chambers around joint axes via complementary volume changes in said first and second drive tube sections*.

Further, Applicant's independent claim 28 recites, *inter alia*, swivelably positioning a plurality of whirl chambers next to one another so that the whirl chambers are swivelable relative to one another, and controlling the swiveling of the plurality of whirl chambers by *changing a complementary volume of first and second drive tube sections positioned between adjacent longitudinal stiffening elements of the whirl chambers*. Applicant submits that no proper combination of the applied art teaches or suggests at least the above-noted features of the present invention.

As Applicant has previously set forth, the tubes of PEREZ are specially designed to attach to the skin of the wing to slide adjacent panels toward and away from each other. As shown, e.g., in Figures 10 and 11, actuating drive 2 expands *longitudinally* in order to effect the desired longitudinal sliding and positioning of adjacent panels, thereby achieving the desired contour of the wing.

In contrast to PEREZ, Applicant again notes CHESTER is designed to rotate a wing section around a pivot point through the inflation of an expansible tube 19. The expansible tube 19, when inflating, appears to expand radially to pivotably displace bulkhead walls 16 and 17. Thus, Applicant submits that

CHESTER fails to provide any teaching or suggestion for longitudinally sliding adjacent panels, as disclosed by PEREZ, such that it would not have been obvious to one ordinarily skilled in the art to modify PEREZ in view of any teachings of CHESTER.

As the basic motion of the wing sections of PEREZ and CHESTER are distinct from each other, Applicant submits that it would not have been obvious to simply reposition actuator 2 of PEREZ, which is specially designed to effect longitudinal sliding of adjacent panels, in view of expansible tube 19 of CHESTER, which is intended to achieve rotational movement of wing sections.

Moreover, Applicant submits that CHESTER fails to provide any teaching or suggestion for moving actuator 2 of PEREZ from the skin to a position closer to the pivot point, as asserted by the Examiner. Applicant notes it is not apparent from the art of record that moving actuator 2 of PEREZ to a more interior position of the wing to act on supporting elements 76 would allow PEREZ to continue longitudinally sliding adjacent panels in its intended manner. That is, the actuators of PEREZ are designed and arranged to act directly on the panels, and there is no teaching or suggestion that these actuators will operate in their intended manner if they are changed to a position to act instead on the support elements. Further, from an engineering perspective, the asserted modification would reduce the length of the moment arm, thereby requiring an additional expenditure of energy to move the elements 76, 76a, and 76b in the desired manner. Thus, Applicant submits that it would not have been obvious to modify PEREZ in a manner that would increase costs and energy consumption.

In this regard, CHESTER cannot suggest the efficacy of such a modification because the expansible tube 19 of CHESTER is arranged between bulkheads, such that the force exerted during inflation is distributed along the bulkheads to achieve the desired rotation. CHESTER provides no teaching or suggestion with regard to the forces necessary to operate actuators 2 between supporting elements 76, nor can CHESTER even arguably provide any suggestion that the asserted modification of PEREZ would be a success. Accordingly, Applicant submits that the art of record fails to teach or suggest that it would have been obvious to modify PEREZ in the manner asserted by the Examiner.

Applicant also notes that, as the actuating devices of PEREZ are intended to operate independently of each other, the art of record fails to provide the requisite motivation or rationale for modifying PEREZ in any manner that would render unpatentable the instant invention. That is, Applicant notes that, while Figures 6 – 8 of CHESTER shows a complementary inflation/deflation of expansible tubes, it is not apparent how or why one ordinarily skilled in the art would modify PEREZ to include such a feature. That is, the single pivot wing of CHESTER provides an up/down motion for the single pivot, whereas PEREZ discloses a complicated multiple shifting/sliding of upper and/or lower wing sections to achieve a desired wing contour.

Because the asserted combination with CHESTER would not allow PEREZ to shift two upper plates of the wing and the two counterpart lower plates in the manner shown in Figure 12 of PEREZ, Applicant submits that the asserted

combination of documents would not enable PEREZ to operate in its intended manner. Moreover, Applicant submits that the asserted combination with CHESTER would not allow PEREZ to operate in the manner shown in Figure 11 of PEREZ, in which multiple shifts occur without a counter shift.

Accordingly, for the foregoing reasons, Applicant submits that no proper combination of PEREZ and CHESTER can render unpatentable the instant invention recited in at least independent claims 1 and 28, and that the asserted combination of documents is improper and should be withdrawn.

Further, Applicant submits that claims 2 – 17 and 27 are allowable at least for the reason that these claims depend from allowable base claims and because these claims recite additional features that further define the present invention. Accordingly, Applicant request that the Examiner reconsider and withdraw the instant rejection and indicate that these claims are allowable.

2. Over Perez in view of Chester and further in view of McAnally

Applicant traverses the rejection of claims 18, 19, and 24 – 26 under 35 U.S.C. § 103(a) as being unpatentable over PEREZ in view of CHESTER and further in view of McANALLY (U.S. Patent No. 4,349,169). The Examiner asserts that it would have been obvious to modify the asserted combination of PEREZ and CHESTER to include two tubes, as taught by McANALLY. Applicant traverses the Examiner's assertions.

Further to above-noted discussion of PEREZ and CHESTER, Applicant submits that McANALLY fails teach or suggest whirl chambers, and certainly fails to provide any teaching or suggestion for adjusting adjacent whirl chambers.

Moreover, Applicant submits that McANALLY fails to teach or suggest the subject matter noted above as deficient in the asserted combination of PEREZ and CHESTER, and fails to teach or suggest the requisite motivation or rationale to properly combine PEREZ and CHESTER in the manner asserted by the Examiner.

Applicant submits that McANALLY fails to provide any teaching or suggestion for longitudinally sliding adjacent panels in a wing, as disclosed by PEREZ, and fails to provide any teaching or suggestion for rotationally moving wing sections, as disclosed by CHESTER. Thus, Applicant submits that McANALLY cannot even arguably suggest the requisite motivation or rationale for combining PEREZ and CHESTER under 35 U.S.C. § 103(a).

While Applicant acknowledges that McANALLY discloses a longitudinally extending actuating element, McANALLY fails to provide any teaching or suggestion to render the asserted combination of art proper. That is, Applicant submits that, as the engineering questions raised in the asserted combination of PEREZ and CHESTER, i.e., the different modes of operation, the higher energy requirements and forces, etc., are not resolved by any teaching or suggestion of McANALLY, the asserted combination of documents fails to render obvious the instant invention. Thus, Applicant submits that this rejection is improper and should be withdrawn.

In view of the foregoing, Applicant further notes that McANALLY fails to provide any teaching or suggest as to why or how one ordinarily skilled in the art would combine the teachings of PEREZ and CHESTER. In other words,

Applicant submits that McANALLY, which alters the skin contour without separate sections or sliding panels, fails to teach or suggest any reasons why one ordinarily skilled in the art would modify the sliding/shifting plate design of PEREZ with the rotational movement of CHESTER, particularly, when such a modification seemingly prevents PEREZ from operating in its intended manner.

Because no proper combination of the applied art teaches or suggests the combination of features recited in the independent claims, Applicant submits that the art of record fails to render unpatentable any of the pending claims that depend from at least independent claim 1.

Accordingly, Applicant request that the Examiner reconsider and withdraw the instant rejection and indicate that these claims are allowable.

3. Over Perez in view of Chester and further in view of Fisher

Applicant traverses the rejection of claims 20 – 23 under 35 U.S.C. §103(a) as being unpatentable over PEREZ in view of CHESTER and further in view of FISHER (U.S. Patent No. 3,785,567). The Examiner asserts that, as they are equivalent devices, it would have been obvious to substitute the actuator of FISHER for the actuator utilized in the combination of PEREZ and CHESTER. Applicant traverses the Examiner's assertions.

As FISHER discloses a movable wall for a fan nozzle assembly, this document is related to the engine not the contour of the wing, as described in PEREZ and CHESTER. Because this document is not related to wing contour, Applicant submits that this document fails to disclose the requisite motivation or

rationale for modifying PEREZ in view of CHESTER in the manner asserted by the Examiner.

Applicant further submits that, as it is unrelated to the subject matter of PEREZ and CHESTER, FISHER fails to teach or suggest the subject matter noted above as deficient in the asserted combination of the applied art.

Further, Applicant notes that FISHER fails to provide any teaching or suggest as to why or how one ordinarily skilled in the art would combine the teachings of PEREZ and CHESTER, as these documents are directed to wing designs that operate in wholly distinct manners, and the asserted combination of these documents raises engineering concerns not address in the art of record, and FISHER is directed to engine structure.

Thus, Applicant submits that FISHER fails to teach or suggest any reasons why one ordinarily skilled in the art would modify the sliding/shifting plate design of PEREZ with the rotational movement of CHESTER, particularly, when such a modification seemingly prevents PEREZ from operating in its intended manner.

Because no proper combination of the applied art teaches or suggests the combination of features recited in the independent claims, Applicant submits that the art of record fails to render unpatentable any of the pending claims that depend from at least independent claim 1.

Accordingly, Applicant request that the Examiner reconsider and withdraw the instant rejection and indicate that these claims are allowable.



***Traversal of Rejection Under 35 U.S.C. § 112, Second Paragraph***

Applicant traverses the rejection of claims 20 – 23 under 35 U.S.C. §112, second paragraph, as being indefinite. The Examiner asserts it is not clear how levers relate to the recited stiffening members.

Applicant directs the Examiner's attention to paragraph [0099] – [0103] of the original specification, which provides support for the subject matter of claims 20 – 23. Moreover, Applicant submits that one ordinarily skilled in the art, upon reviewing the instant specification and drawings, would readily understand the instant invention and the scope of the claims. Thus, Applicant submits that the claims clearly recite the subject matter that the inventor regards as his invention.

Accordingly, Applicant requests that the Examiner reconsider and withdraw the formal rejection of claims 20 – 23 and indicate the pending claims are fully in compliance with the requirements of the statute.

***Application is Allowable***

Thus, Applicants respectfully submit that each and every pending claim of the present invention meets the requirements for patentability under 35 U.S.C. §§ 102 and 103, and respectfully request the Examiner to indicate allowance of each and every pending claim of the present invention.

***Authorization to Charge Deposit Account***

The undersigned authorizes the charging of any necessary fees, including any extensions of time fees required to place the application in condition for allowance by Examiner's Amendment, to Deposit Account No. 19 - 0089 in order to maintain pendency of this application.

**CONCLUSION**

In view of the foregoing, it is submitted that none of the references of record, either taken alone or in any proper combination thereof, anticipate or render obvious the Applicants' invention, as recited in each of claims 1 – 28. The applied references of record have been discussed and distinguished, while significant claimed features of the present invention have been pointed out.

Accordingly, reconsideration of the outstanding Office Action and allowance of the present application and all the claims therein are respectfully requested and now believed to be appropriate.

Respectfully Submitted,  
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